

# MULTI-BEAM ANTENNA

## Abstract

A multi-beam antenna comprises at least one curved surface, at least one dielectric substrate, and a plurality of end-fire antenna feed elements on the dielectric substrate. The at least one curved surface may be either reflective, refractive or diffractive. Electromagnetic waves launched from the antenna feed elements are directed at the at least one curved surface, and are either reflected, refracted or diffracted thereby. In one embodiment, the substrate is located within a light assembly, e.g. a vehicle headlight, wherein at least one source of light is operatively associated with the dielectric substrate, and the at least one curved surface comprises the concave optical reflector of the light assembly.